

YOKOYAMA et al. -- 09/849,344
Client/Matter: 041411-0277195

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously presented) An injection control method for a die-casting machine, wherein molten material is injected into a casting mold by an injection cylinder unit, comprising:

setting target velocity data specifying an injection operation required for the injection cylinder unit in advance;

performing a first shot of an injection operation, and recording command data provided to the injection cylinder unit and detecting velocity data indicating the operation performed by the injection cylinder unit during the first shot of the injection operation;

determining a difference between the detected velocity data and the target velocity data and calculating a correction value based on the difference;

using the calculated correction value and generating command data for a second shot of the injection operation; and

operating the injection cylinder unit by providing to it the command data for the second shot of the injection operation;

wherein the correction value is obtained by operating the injection cylinder unit for a predetermined number of the injection shots by ordinary injection position feedback control, and

wherein, after said predetermined number of the injection shots by the ordinary injection position feedback control, control is shifted to open loop control of injection velocity by command data generated from the correction value and the previous command data.

2. (Canceled)

3. (Original) The injection control method for a die-casting machine according to claim 1, wherein

a value of servo delay in the injection cylinder unit is set in advance, and

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in calculating the correction value, the difference between the detected velocity data and the target velocity data is calculated in a state that the phase of the detected velocity data is advanced by the servo delay.

4. (Previously presented) The injection control method for a die-casting machine according to claim 3, wherein

adjustment of the servo delay is made for each of low-velocity section, high-velocity section, and deceleration section of a shot of the injection operation.

5. (Original) The injection control method for a die-casting machine according to claim 1, wherein

in setting the target velocity data, a pattern in terms of position and velocity for specifying injection operation is set in advance by a user, the pattern being converted into time-series position command data in terms of position and time so as to be used for injection position feedback control, as well as the pattern being converted into target velocity data in terms of velocity and time.